

What is claimed is:

1. A wiring substrate manufacturing method comprising a step of forming a wiring of a wiring substrate by an exposure treatment using a photomask which has a shade pattern containing at least nano particles and a binder.

2. The wiring substrate manufacturing method according to claim 1,

wherein said nano particles comprise a black pigment, and the wiring substrate manufacturing method further comprises a step of forming each of said shade patterns by printing a shade material containing said black pigment of 30% or less.

3. The wiring substrate manufacturing method according to claim 1,

wherein said shade pattern correspond to said wirings, respectively.

4. The wiring substrate manufacturing method according to claim 1,

wherein an area of said shade pattern is relatively smaller than an area of a light transmission region having no shade pattern.

5. The wiring substrate manufacturing method according to claim 1, further comprising the steps of:

forming a line pattern for forming said wiring, in a thickness direction of a wiring substrate main body; and

forming a hole pattern which is a pattern for forming said wirings and which connects, to one another, line patterns located on difference wiring layers.

6. The wiring substrate manufacturing method according to claim 1,

wherein said nano particles consist of carbon.

7. The wiring substrate manufacturing method according to claim 1, further comprising a step of mounting one or a plurality of electronic components on a first surface of said substrate.

8. The wiring substrate manufacturing method according to claim 7, further comprising a step of mounting, while a second surface opposite to the first surface of said substrate faces a printed wiring substrate, the substrate on which said one or plurality of electronic components are mounted, on a printed wiring substrate.

9. A wiring substrate manufacturing method, the wiring substrate comprising: a substrate; a multilayer wiring formed on a main surface of said substrate; a plurality of junction terminals formed over said multilayer wiring and electrically connected to said multilayer wiring; and a plurality of external junction terminals formed over a rear surface of said substrate and electrically connected to said multilayer wiring through a via hole penetrating the main surface and the rear surface of said substrate,

wherein said multilayer wiring is formed by a photolithographic technique using a photomask which has a shade pattern containing at least nano particles and a binder.

10. The wiring substrate manufacturing method according to claim 9,

wherein said nano particles are carbon.

11. The wiring substrate manufacturing method according to claim 9,

wherein said shade pattern is formed by using a resist containing a light absorber employed for exposure light.

12. A wiring substrate manufacturing method, the wiring substrate comprising: a substrate; a multilayer wiring formed on a main surface of said substrate; a plurality of junction terminals formed over said multilayer wiring and electrically connected to said multilayer wiring; and a plurality of external junction terminals formed over a rear surface of said substrate and electrically connected to said multilayer wiring through a via hole penetrating the main surface and the rear surface of said substrate,

wherein said multilayer wiring is formed by a photolithographic technique, and photolithography is performed by using a photomask having a shade pattern comprising a resist and an organic film having a light absorbent property against exposure light at the time of said photolithography.

13. The wiring substrate manufacturing method according to claim 9,

wherein said substrate consists of an no-alkali glass.

14. The wiring substrate manufacturing method according to claim 9,

wherein the exposure light used at the time of said photolithography has a longer wavelength than 350 nm.

15. The wiring substrate manufacturing method according

to claim 9, further comprising a step of forming the plurality of external junction terminals electrically connected to said multilayer wiring through the via hole penetrating the main surface and the rear surface of said substrate, and then mounting an electronic component on the main surface of said substrate through said junction terminals.

16. The wiring substrate manufacturing method according to claim 9, further comprising a step of forming a passive element on the main surface of said substrate.

17. The wiring substrate manufacturing method according to claim 9,

wherein said nano particles consist of carbon.

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